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Greenland, Denmark and the pathway to uranium supplier status

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ABSTRACT

On 24 October 2013, the Greenland parliament, Inatsisartut, lifted a decades-long moratorium on mining radioactive elements, paving the way for the country – and the Kingdom of Denmark – to eventually become the newest Western (and Arctic) supplier of uranium. Greenland's status as a territory within a state is accompanied by a complicated legal system within the Danish Kingdom, where Nuuk has authority over its natural resources and Copenhagen is constitutionally responsible for the Kingdom's foreign, defence and security policies. This system is further complicated by Denmark's membership (and Greenland's non-membership) in the European Union. For a Kingdom that has otherwise foregone the nuclear fuel cycle (except for medical purposes), the process ahead for Greenland and Denmark in jointly developing a 'Kingdom-appropriate' regulatory system to govern uranium promises to be complex, and one based on a steep learning curve. The biggest challenges are not only how to administratively structure a system for uranium governance, including delineating authorities between Greenland and Denmark, but also the need for a comprehensive, clearly articulated and jointly approved 'uranium policy' to guide its implementation.

1. Introduction

Much of the current debate on uranium in Greenland is around clarifying issues of competences and authorities between it and Denmark. The two countries, along with the Faroe Islands, are linked within the 'Commonwealth of the Realm', or *Rigsfællesskab*, where the overseas islands enjoy autonomous authority in domestic affairs while Denmark remains constitutionally responsible for foreign, defense, and security. In 2009, the *Act on Greenland Self-Government* granted Greenland authority over its natural resources, introducing an entangled legal system within the Danish Kingdom – a system further complicated by Denmark's membership (and Greenland's non-membership) in the European Union.

Until recently, Greenland had a decades-long practice of not allowing the exploration and extraction of uranium. On 24 October 2013, the Greenland parliament, Inatsisartut, lifted the so-called 'zero tolerance policy' on mining radioactive elements, thereby removing an immediate hurdle to extracting rare earths elements (REE) and other minerals that coexist with significant concentrations of uranium and thorium. The REE deposit at Kvanefjeld alone contains more than 10 million tonnes of rare earth, and also 575 million pounds (over 260,000 tonnes) of uranium (Kalvig et al., 2014: 22). The hurdle that remains, however, is a challenging one. There exists no system for administering export controls and nuclear safeguards on the Arctic island, a challenge shared by a number of other countries currently considering their uranium potential, including Tanzania, Mongolia and Nepal. But unlike these nations, Greenland is a self-governing island within a state. Denmark and Greenland, therefore, have to develop a joint, Kingdom-appropriate structure almost from scratch, one that must address a range of issues, from radiation protection to inventory control and nuclear non-proliferation.

This paper will situate Greenland and Denmark within the global uranium market, explaining how a shifting industry and regulatory structure have evolved over the decades from their focus primarily on security to one also encompassing environmental, health and safety considerations. It will also situate the Rigsfællesskab within the results analyzed by the *Governing Uranium* project, a global research project led by the Danish Institute for International Studies (DIIS) which is studying the governance (safety, security and safeguards) of mining production, milling and trade across 15 supplier and consumer countries. The paper then provides an overview of Danish-Greenlandic official activities in lead-up to the lifting of 'zero tolerance' and beyond, and how Copenhagen and Nuuk are working towards understanding the political responsibilities that come with supplier status. The paper concludes with a discussion of the policy challenges and

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opportunities facing Greenland and Denmark as they embark on the pathway to uranium supplier status.

2. Shifting market, shifting geographies

The uranium industry is continually being reshaped in response to increased competition, nuclear accidents and geopolitical concerns. It is multinational with public/private cross-ownership in which a number of interests, including economic, commercial and strategic, can overlap or collide. Presently, the uranium market is shifting. At a price of approximately US$10 per pound (US$22 per kilogram) in 2000, the spot price soared in the mid-2000s from roughly US$20 per pound (US$44 per kilogram) to almost US$140 per pound (US$311 per kilogram) in 2007. Funding for exploration also soared but the short-lived price bubble meant new deposits could not be opened before prices went down again. Many projects have been put on hold in Australia, Canada and United States. The Kayelekera mine in the world's newest uranium-producing country, Malawi, was placed on 'care and maintenance' in February 2014 after only five years of production. Today, the spot price lingers around US$30/lb, with demand further strained by annual global production and abundant secondary supplies (such as government or commercial inventories) that continually surpass demand.

The geographies of uranium production and consumption are also shifting. Long-standing uranium consumers such as Japan and Germany are scaling back their reliance on nuclear power while China's nuclear ambitions suggest it will surpass the United States over the next decade(s) to become the world's largest consumer. At the same time, India's re-entry after a three-decade nuclear trade moratorium has added a new and thirsty importer to the global market. With Kazakhstan outpacing Canada and Australia in 2008 to become the world's largest supplier, the centres of uranium production and consumption are leaning eastward while new uranium suppliers such as Malawi and potentially Tanzania and Greenland are creating new centres of supply through countries that may or may not have a nuclear regulatory system in place.

The governance of uranium has also evolved nationally as many lessons have been learned during seven decades of mining. Most of the harshest are related to environmental hazards, particularly at so-called 'legacy mines', which were opened before an established environmental consciousness and abandoned or closed without rehabilitation. And, the legacy endures: many mines which were mothballed during the 1950s through to the 1990s are either still in need of remediation, or remediation efforts are still ongoing. Today, however, uranium producers are subject to a range of environmental permissions, monitoring and closure plans. Social impact assessments and public consultations are also increasingly required with industry sensitive to the need for 'social licensing' from communities before and during mining operations.

Governance at the international level is also maturing. Comprehensive nuclear safeguards under the International Atomic Energy Agency (IAEA) have been in place since 1972. Historically, their application to the front end of the nuclear fuel cycle have been limited to the output of conversion plants (i.e., uranium hexafluoride or UF6, the chemical form of uranium that is used during the uranium enrichment process), leaving mining, milling and conversion outside of full international material accountancy and control. Ongoing nuclear proliferation challenges such as the decade-long effort to reach a deal with Iran coupled with technological advances in processing and refining have prompted the IAEA to address the issue of which uranium-bearing materials are subject to its safeguards system (i.e. materials that require full material accountancy and control). The first such clarification occurred in 2003 and the second is currently under development. The international regulatory system is therefore evolving, adding additional inspection and reporting requirements to a state's treaty obligations. Consequently, uranium suppliers today have to take into account a range of regulatory provisions to include environmental protection, public consultation, and international non-proliferation treaty obligations.

3. A mineral of a different sort

All of the uranium supplier countries studied under the Governing Uranium project categorize uranium-bearing ores and their concentrates as a type of strategic resource and thus require government ownership or oversight, particularly on trade. For long-standing uranium producers (and consumers) the guiding principle of classifying uranium as a mineral of a different sort is grounded in its explosive potential. Canada, for example, declared nuclear energy a matter of 'national interest' in its 1946 *Atomic Energy Control Act*, providing Ottawa exclusive jurisdiction. Similarly, Australia (in 1952) and India (in 1962) both labelled uranium as a 'prescribed substance' subject to federal oversight in their respective atomic energy acts while Brazil codified the sole authority over uranium to the government in its 1988 Federal Constitution. South Africa also considers uranium as a 'restricted material' in its 1999 *Nuclear Energy Act* and more recently, Namibia categorized uranium as a 'strategic mineral' in a Cabinet decision in 2007, and also as a potential energy production source (Hammerslacht, 2012: 9).

The 'uranium rush' began during World War II. By 1939, top government officials in Europe, Russia and United States were beginning to recognize the strategic importance of uranium as a result of meetings with scientists. Russia's 1942 Resolution 'On Uranium Mining' ordered the start of uranium production in Tajikistan with the focus shifting in the second half of the 1940s to deposits in Eastern Europe (Khlopkov and Chekina, 2014: 18). For the United States, the identification and purchasing of uranium from abroad was carried out by Murray Hill Area, a special unit of the Manhattan Project. Almost half of the uranium used in the US nuclear weapons complex was initially imported from other countries, specifically Canada, the former Belgian Congo, as a byproduct of gold mining in South Africa and early uranium recovery in Australia (Squassoni et al., 2014: 8). Post-World War II, it became clear how uranium resources would be used. At the opening of Rum Jungle uranium mine in Australia's Northern Territory in 1954, then Australian Prime Minister Robert Menzies stated (Cawte, 1992: 8):

> Whatever we may think about atomic bombs and their terrible subsequent development, let us understand quite plainly and realistically that part of our security in the present tremulous condition of world safety depends upon the superiority of the Free World in terms of these dreadful instruments. And Australia, by making a contribution of this kind... is itself making a powerful contribution to international defence.

In securing the 'Free World', the United Kingdom and United States established the Combined Development Trust (CDT) (later the Combined Development Agency, CDA) in June 1944 to 'secure control of uranium and thorium' within their territories and in third countries. In these early years, the applications of splitting the atom for civilian purposes were being developed, but the overriding objective was acquiring as much uranium as possible to make as many atomic bombs as possible. So much so that the UK Department of Atomic Energy commissioned a legal review in 1947 to check whether uranium acquired from the Belgian Congo through the CDT could be used for peaceful energy purposes (Berkemeier et al., 2014: 4–5).